

This listing of claims will replace all prior versions, and listings, of claims in the application.

What is claimed:

1. (Currently Amended) A method of treating patients who have diseases characterized bone loss comprising the step of administering to said patient an amount of TRANCE/RANK inhibitors effective to inhibit osteoclastogenesis and/or osteoclast function, wherein said TRANCE/RANK inhibitor is a compound having the Formula I wherein:

R₁, and R₂ are, independently, selected from the group consisting of -H, -OCH₃, -CH₂CH₃, -*t*-butyl, 3-carboxy-4-chlorophenylamino, -N-(CH₂CH₂OH)₂, and -O(O)C-Ph;

R₃ is selected from the group consisting of -H, ethyl, -OCH₃, -Cl, Br, F, 3carboxy-4 chlorophenylamino, -N-(CH₂CH₂OH)₂, -*t*-butyl, and -OC(O)-Ph, and is not limited to attachment at any certain position on the phenyl ring to which it is attached; and

R₄ is selected from the group consisting of -Br, -Cl, and -F.

2. (Cancelled) ~~The method of claim 1 wherein said TRANCE/RANK inhibitor is a compound having the Formula I wherein:~~

~~R₁, and R₂ are, independently, selected from the group consisting of -H, -OCH₃, -CH₂CH₃, -*t*-butyl, 3-carboxy-4-chlorophenylamino, -N-(CH₂CH₂OH)₂, and -O(O)C-Ph;~~

~~R₃ is selected from the group consisting of -H, ethyl, -OCH₃, -Cl, Br, F, 3carboxy-4 chlorophenylamino, -N-(CH₂CH₂OH)₂, -*t*-butyl, and -OC(O)-Ph, and is not limited to attachment at any certain position on the phenyl ring to which it is attached; and~~

~~R₄ is selected from the group consisting of -Br, -Cl, and -F.~~

3. (Original) The method of claim 2 wherein R₃ is attached at either the 1 or 4 position of the 15 phenyl ring.

4. (Previously Presented) The method of claim 1 wherein said TRANCE/RANK inhibitor is a compound having the Formula I wherein:

R₁, R₂, and R₃ are -OCH₃, R₃ is attached at the 4 position, R₄ is -Cl;

R₁, and R₂ are methyl, R₃ is ethyl, attached at the 4 position, R₄ is -Cl;

R₁, and R₂ are -OCH₃, R₃ is -Cl, attached at the 2 position, R₄ is -Cl;

R₁, and R₂ are -OCH₃ and R₃ is H, R₄ is -Cl;

R₁, is H, R₂ and R₃ are 3-carboxy-4-chlorophenylamino, and R₃ is attached at the 4 position, R₄ is -Cl;

R₁ and R₂ are -N(CH₂CH₂OH)₂, R₃ is Cl, attached at the 4 position, R₄ is -Cl;

R₁, R₂, and R₃ are *t*-butyl, R₃ is attached at the 4 position, R₄ is -Cl;

R₁, is -OCH₃, R₂ and R₃ are H, R₄ is Cl; or

R₁, R₂, and R₃ are benzoate, R₃ is attached at the 4 position, R₄ is Br.

5. (Original) The method of claim 1 wherein said TRANCE/RANK inhibitor is selected from the group consisting I-A, I-B, I-C, I-D, I-E, I-F, I-G, I-H and I-I.

6. (Withdrawn) The method of claim 1 wherein said TRANCE/RANK inhibitor is a compound having the Formula II wherein:

R₁ is selected from the group consisting of –diphenylchloromethyl, -di(4chlorophenyl)chloro methyl, and 4-(diphenylchloromethyl)phenyl; and R₂, R₃, R₄ are independently selected from the group consisting of -Br, -Cl, and -F.

7. (Withdrawn) The method of claim 6 wherein R₂, R₃, and R₄ are each -Cl.

8. (Withdrawn) The method of claim 1 wherein the TRANCE/RANK inhibitor is selected from the group consisting compounds II-A, II-B, II-C and II-D.

9. (Withdrawn) The method of claim 1 wherein said inhibitor is a compound having Formula III wherein:

R₁= (NO₂)₂, O(CO)CH₃, OH, O(CO)CH₃, O(CO)(CH₂)₂COOH, O(CO)CH₂Br, O(CO)CH₂Cl, O(CO)CH₂N(CH₃)₃, or OC₈H₉O;

R₂= CH₂O(N₂), CHO, CH₂O(N₂), CN, CH₃, COOH, CHNOH, CH₂O(CO)(CH₂)₂COOH, CHN(NH)CONH₂, CHN(NH)C₆H₅, CHN(CH₂)C₆H₅, CH₂N(CH₂)₂OH, CH₂NC₆H₅, or CH₂N(NH)CSNH₂;

R₃= OH, or H;

R₄= CH₃;

R₅= OH;

R₆ = C₄H₃O₂, N(NHCO)C₆H₄Cl, N(NHCO)C₆H₄F, COOH, O, COCH₃, CH(CH₃)(CH₂)₂COOH, CH(CH₃)(CH₂)₂COOCH₃, O(CO)C₆H₅, or OH;

$R_7 = \text{O}(\text{CO})\text{CH}_2\text{N}(\text{CH}_3)_3$, or $\text{O}(\text{CO})\text{CH}_3$;

$R_8 = \text{OH}$;

$R_9 = \text{O}$, or OH ; and $R_{10} = \text{O}$

$R_{10} = \text{O}$.

10. (Withdrawn) The method of claim 1 wherein the inhibitor is selected from the group consisting compounds 111-1 to 111-31.

11. (Withdrawn) The method of claim 1 wherein said inhibitor is a compound having Formula IV wherein:

$R_1 = \text{O}(\text{CO})(\text{CH}_2)_2\text{COOH}$, or $\text{O}(\text{CO})\text{CH}_2\text{Br}$; and

$R_2 = \text{O}(\text{CO})(\text{CH}_2)_2\text{COOH}$, or $\text{O}(\text{CO})\text{CH}_2\text{Br}$.

12. (Withdrawn) The method of claim 1 wherein the inhibitor is selected from the group consisting compounds IV-1 and IV-2.

13. (Withdrawn) The method of claim 1 wherein said inhibitor is a compound having Formula V wherein:

$R_1 = \text{O}$, OH , or $\text{O}(\text{CO})\text{CH}_3$;

$R_2 = \text{O}(\text{CO})\text{CH}_3$, OH , $\text{CO}(\text{CH}_3)$, or $\text{CO}(\text{CH}_2)\text{O}(\text{CO})\text{CH}_3$;

$R_3 = \text{CH}_3$, or OH ; and

$R_4 = \text{O}(\text{CO})\text{CH}_2\text{C}_6\text{H}_4\text{I}$, or CH_3 .

14. (Withdrawn) The method of claim 1 wherein the inhibitor is selected from the group consisting compounds V-1 and V-5

15. (Withdrawn) The method of claim 1 wherein said inhibitor is a compound having Formula VI wherein:

$R_1 = \text{O}(\text{CO})\text{CH}_3, \text{OH}, \text{or } \text{O}(\text{CO})(\text{CH}_2)_2\text{COOH};$

$R_2 = \text{CH}_3;$

$R_3 = \text{O}, \text{or OH};$

$R_4 = \text{CH}_3$

$R_5 = \text{C}_9\text{H}_{13}\text{COCH}_3, \text{C}_9\text{H}_{13}(\text{CH}_2\text{CH}_3)(\text{CH}_2\text{OH}), \text{C}_9\text{H}_{13}(\text{CH}_3\text{CH}_3)(\text{CH}_2\text{OOOCH}_3),$
 $\text{C}_9\text{H}_{13}(\text{CH}_2\text{CH}_2)(\text{CH}_2\text{OCO}(\text{CH}_2)_2\text{COOH}), \text{C}_9\text{H}_{13}(\text{CH}_2\text{CH}_3)(\text{COOH}), \text{or}$
 $\text{C}_8\text{H}_7\text{O}(\text{CH}_3)(\text{C}_4\text{H}_9\text{OCH}_3);$

$R_6 = \text{CH}_3;$

$R_7 = \text{O}, \text{or H};$

$R_8 = \text{CH}_3;$

$R_9 = (\text{CH}_3)_2; \text{and}$

$R_{10} = \text{Br}.$

16. (Withdrawn) The method of claim 1 wherein the inhibitor is selected from the group consisting compounds VI-1 and VI-11.

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17. (Withdrawn) The method of claim 1 wherein the inhibitor is selected from the group consisting compounds VII, VIII, IX, X, XI and XII.

Claims 18-43: (Cancelled)